MICROH
PROFESSIONAL PRODUCTS
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USER MANUAL

LED RAZOR45

Keep this manual for future reference.

TABLE OF CONTENTS

1. INTRODUCTION AND UNPACKING	**1**
2. SAFTEY INSTRUCTIONS	**1-2**
3. OPERATION INSTRUCTIONS	**2-5**
4. MOUNTING AND INSTALLATION	**5**
5. DMX-512 CONTROL CONNECTIONS	**6**
6. MENU NAVIGATION	**7**
7. DMX CHANNELS	**8-11**
8. KEY FEATURES	**11-12**
9. TECHNICAL SPECIFICATIONS	**12**
10. UNIT OVERVIEW	**13**
11. MAINTENANCE AND CLEANING	**14**

1. INTRODUCTION AND UNPACKING

Thank you for purchasing the MICROH LED Razor45 high power RGBAW wash. For your own safety and knowledge, please read this manual before installing or operating the device. This manual covers the important information on installation and applications. Please install and operate the fixture according to instructions. Meanwhile, please keep this manual for future reference.

The MICROH LED Razor45 wash is made of a new type of high temperature strength of engineering plastics and cast aluminum. The fixture is designed and manufactured strictly following CE standards, complying with international standard DMX512 protocol. This fixture is applicable but not limited to large-scale live performances, theater, studio, nightclubs and discos.

The MICROH LED Razor45 utilizes 45 x 1.2W Edison powerful LEDs, which feature high brightness and stability. Please carefully unpack it when you receive the fixture and check if it was damaged during the transportation. And please check whether the following items are included inside the box:

Fixture - One Power Cable - One User Manual – One

2. SAFTEY INSTRUCTIONS

This device has left the factory in perfect condition. In order to maintain this condition and to ensure safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this user manual.

Important:
Damages caused by the disregard of this user manual are not subject to warranty. The dealer will not accept liability for any resulting defects or problems.

If the device has been exposed to temperature changes, do not switch it on immediately. The arising condensation could damage the device. Leave the device switched off until it has reached room temperature, and is dry.

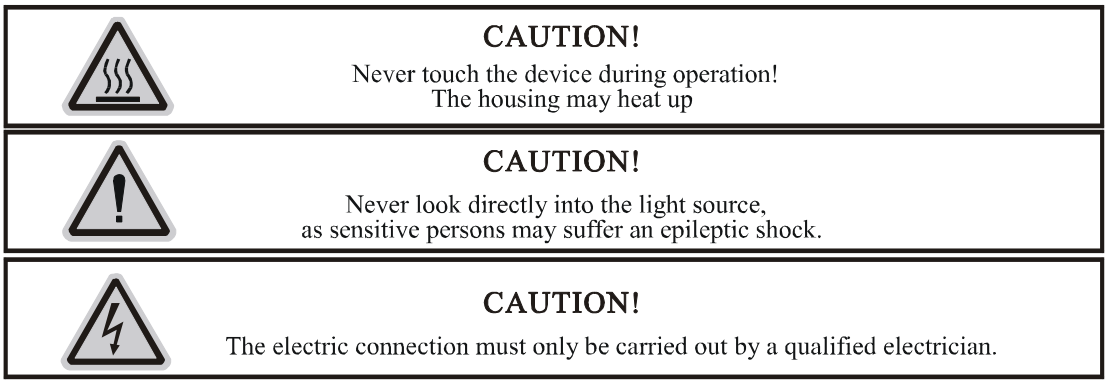
This device falls under protection-class I, therefore it is essential that the device be grounded. The electrical connection must be carried out by a qualified technician.

The device should only be used with rate voltage and frequency. Make sure that the available voltage is not higher than 120V as stated at the end of this manual.

Make sure the power cord is never crimped or damaged in any way, as this could cause shock and damage. If your power chord is damaged in any way, please purchase a new cable from your local MICROH dealer. Always disconnect power, when the device is not in use or before cleaning it. Never pull out the plug by tugging the power cord.

During initial start-up, some smoke or smell may arise. This is a normal process, and does not necessarily mean that the device is defective. It should decrease gradually. Please do not project the beam onto combustible substances.

Fixtures cannot be installed on or near combustible substances. Keep more than 50cm distance from wall for proper ventilation and air flow. If your fixture is or has become damaged in any way, it shall be exclusively replaced or repaired by the manufacturer to avoid any hazard.


CAUTION!
Never touch the device during operation!
The housing may heat up
CAUTION!
Never look directly into the light source,
as sensitive persons may suffer an epileptic shock.
CAUTION!
The electric connection must only be carried out by a qualified electrician.

3. OPERATION INSTRUCTIONS

- Do not turn on the fixture if it has been through severe temperature differences. Damage may occur to the fixture. Wait until unit is at room temperature to operate.
- The unit should be protected from any tremor or agitation during transport.
- Do not expose the fixture in any excessive heat, moisture or any environment with too much dust when installing. Do not lay any power cables on the floor. It may cause electronic shock or damage to persons or equipment.
- Make sure to attach the safety chain and ensure the screws are properly screwed in when installing the fixture.
- Make sure the lens is in good condition. It is recommended to replace the unit if there are any damages or severe scratches.
- Make sure the fixture is operated and installed by qualified personnel.
- Keep the original packaging in case of defective product.
- Any non-manufacturer additions, modifications or changes in any way will void all warranty.
- Please do not attempt to open unit. It is only to be serviced by an authorized technician. If this occurs, or is apparent, the warranty will be voided.

- The fixture's warranty will be voided if there are any malfunctions from not following the user manual or any illegal operation (shock short circuit, electronic shock, lamp broke, etc.)

- This fixture is equipped with 5 operating modes; **DMX, Auto, Sound Active, Master/Slave and Program.**

DMX

In DMX mode, you have 5 modes to select according to programming requirement for your environment: 4ch, 8ch, 21ch, 48ch and 49ch mode.

1. Press MENU button to go to System Mode, then use Up/Down button to select System Mode [DMX] and press Fun button to enter and LCD displays:

Addr	mode	ID
[001]	1	1

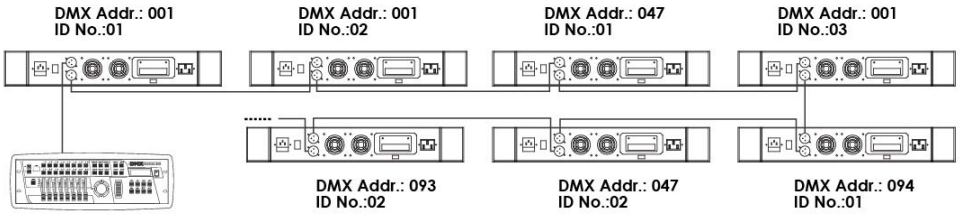
2. Use Fun button to move among [Addr, Mode, ID] and Up/Down button to set up starting DMX address, Mode and ID number.

Addr	mode	ID
[006]	3	1

NOTE: ID number is activated only when Mode 5 is selected. Under Mode 1~4, ID number is invalid.

DMX CONTROL WITH ID NUMBER

ID number is created for DMX fixture with large number of DMX channels and allows one to control multiple units independently or simultaneously on a small DMX console. The figure below shows a simple DMX layout. On the same starting channel, say 001, there are three units with 3 different ID numbers. You can use the 1st channel to target different units and backward channels to program.



AUTO MODE

In this mode, you can combine 12 editable, 6 built-in programs and running time of each program without external DMX controller.

1. Press MENU button till System Mode [xxx] displayed, then use Up/Down button to select System Mode [Auto] and press Fun button to enter. LCD shows:

Step	prog	time
[1]	1	020

2. Press Fun button to move forward and Up/Down button to select step (1-18) and Program number (1-18), time (1-240s) for each step/program.

3. Press MENU button to exit and run in Auto mode.

SOUND ACTIVE MODE

1. Press MENU button till System Mode [xxx] displayed, then use Up/Down button to select System Mode [Sound] and press Fun button to enter. LCD shows:

Sound Program [xx]

2. Press Up/Down button to select Sound Program [1-16]. [1-12] program is editable and [13-16] program is fixed.

3. When Sound Program [1-12] is selected, press Fun button to enter and use Up/Down to select effects [1-12] (same as updating), colors [1-50] (same as updating) and set sound sensitivity from [1-99], HIGHEST to LOWEST level.

4. When Sound Program [13-16] is selected, press Fun button to enter and use Up/Down to set sound sensitivity [1-99].

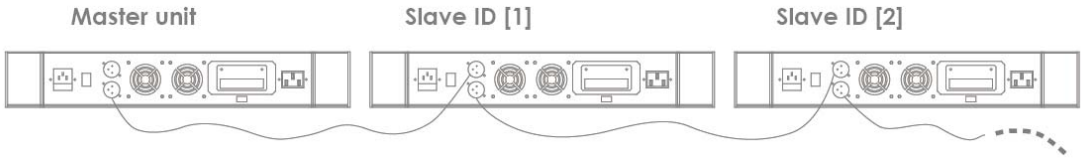
MASTER/SLAVE MODE

In this mode, one can run the whole system in synchronized effect. Maximum 31pcs can be linked in a daisy chain as Master/Slave operating system.

1. One unit is to be set as Master and this Master unit needs to work under PROGRAM or Auto or Sound mode. Also, you need to set Slave Number for total number of Slave units. i.e., there are 5 Slave units (not including Master unit) in the daisy chain, then Slave Number is 5.

2. Other units are to be set in Slave mode and Slave ID is to be set for each Slave unit.

3. Operate the Master unit in PROGRAM, Auto and Sound mode to run the whole system.



In Master/Slave operating mode, all Slave units are to be set to Slave Mode and Slave ID is required for each Slave unit.

1. Press MENU button go to System Mode, then use Up/Down button to select System Mode [Slave] and press Fun button to enter.

2. Use Up/Down button to set up a Slave ID number for that unit. The first Slave connected with the Master unit is Slave ID [1], the next Slave units are Slave ID [2], Slave ID [3], and so on.

In Master/Slave mode, in order to run color flow effect sequentially through the daisy chain, on the Master unit you need to set up a total number for Slave units.

1. Press MENU button till [System Setup] shows up, then use Up/Down button to select System Setup [Slave Number] and press Fun button to enter.

2. Use Up/Down button to set up the number of total Slave units.

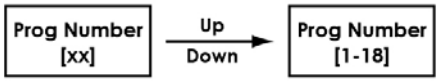
PROGRAM MODE

In this mode, you can edit and run Program Number [1] to [12] combining effect, color, speed to make desired programs. Program from [13] to [18] are non-editable while you can select appropriate speed to run the program.

1. Press MENU button go to System Mode, then use Up/Down button to select System Mode [Program] and press Fun button to enter.

2. Use Up/Down button to select program number, then press Fun button to select Program Effect [x], Program Speed [x], Program Color [x].

3. Press Up/Down button to select effect, color and speed for that program.



Note: 1. Effects [1-12] and Colors [1-50] are from factory default settings or customized.
2. Speed 1 ~ 99 goes from fastest to slowest.

► NON editable program 13-18
Program Number [13]: 50-color step changing
Program Number [14]: Color flowing in Red, Green, Blue, White and Amber
Program Number [15]: 50-color crossfade
Program Number [16]: Falling star effect in white color
Program Number [17]: RRGGWBBAA flashing
Program Number [18]: Pulse close effect

TEST MODE

Test Mode is designed to test LEDs and fans if they are all working.

1. Press MENU button till [Test Mode] shows up, press Fun button to enter Test Mode.

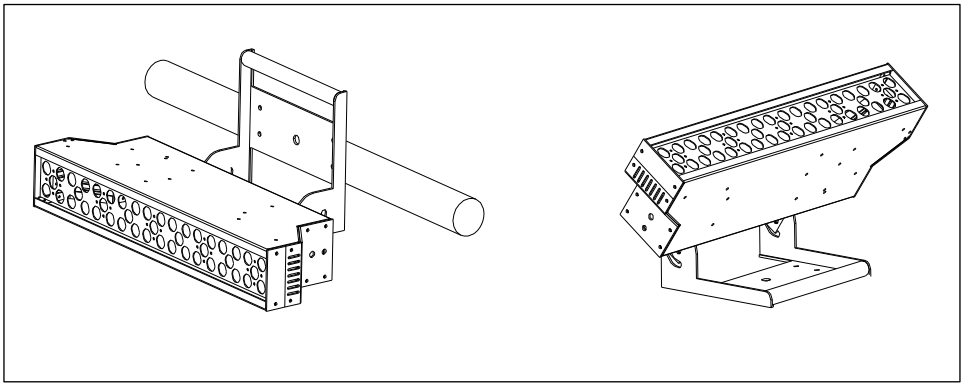
2. Use Up/Down button to select [Test LED] or [Test Fan], then press Fun button to go to Test LED or Test Fan.

3. Press Up/Down to test Red, Green, Blue, White and Amber LEDs or test fan ON/OFF.

NOTE! During operating Fans will be turned off when internal temperature is below 40°C and will be turned on automatically over that level.

4. MOUNTING AND INSTALLATION

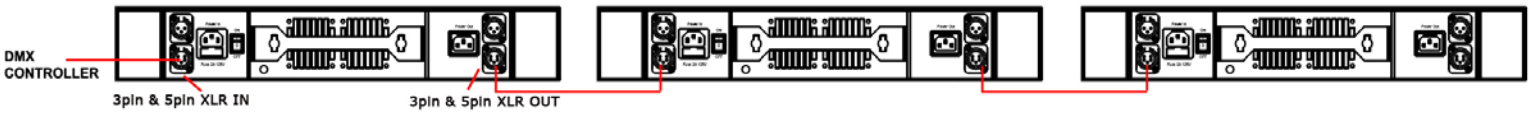
This fixture is designed for floor stand and truss mounting.

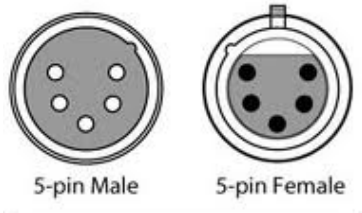


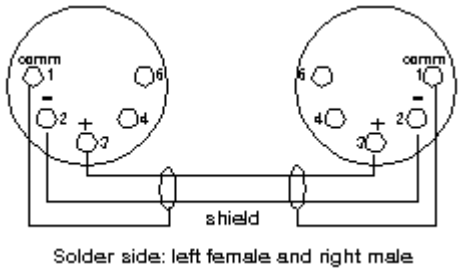
IMPORTANT!!! Safety cables must always be used. The safety cable must be capable of holding 10 times the weight of the fixture.

5. DMX-512 CONTROL CONNECTIONS

Connect the provided XLR cable to the female 3-pin or 5-pin XLR output of your controller and the other side to the male 3-pin or 5-pin XLR input of the MICROH LED PHANTOM. You can chain multiple units together through serial linking. The cable needed should be a two core, screened cable with XLR input and output connectors. Please refer to the diagram below.

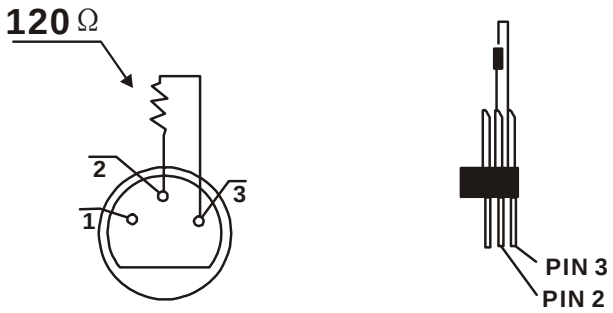






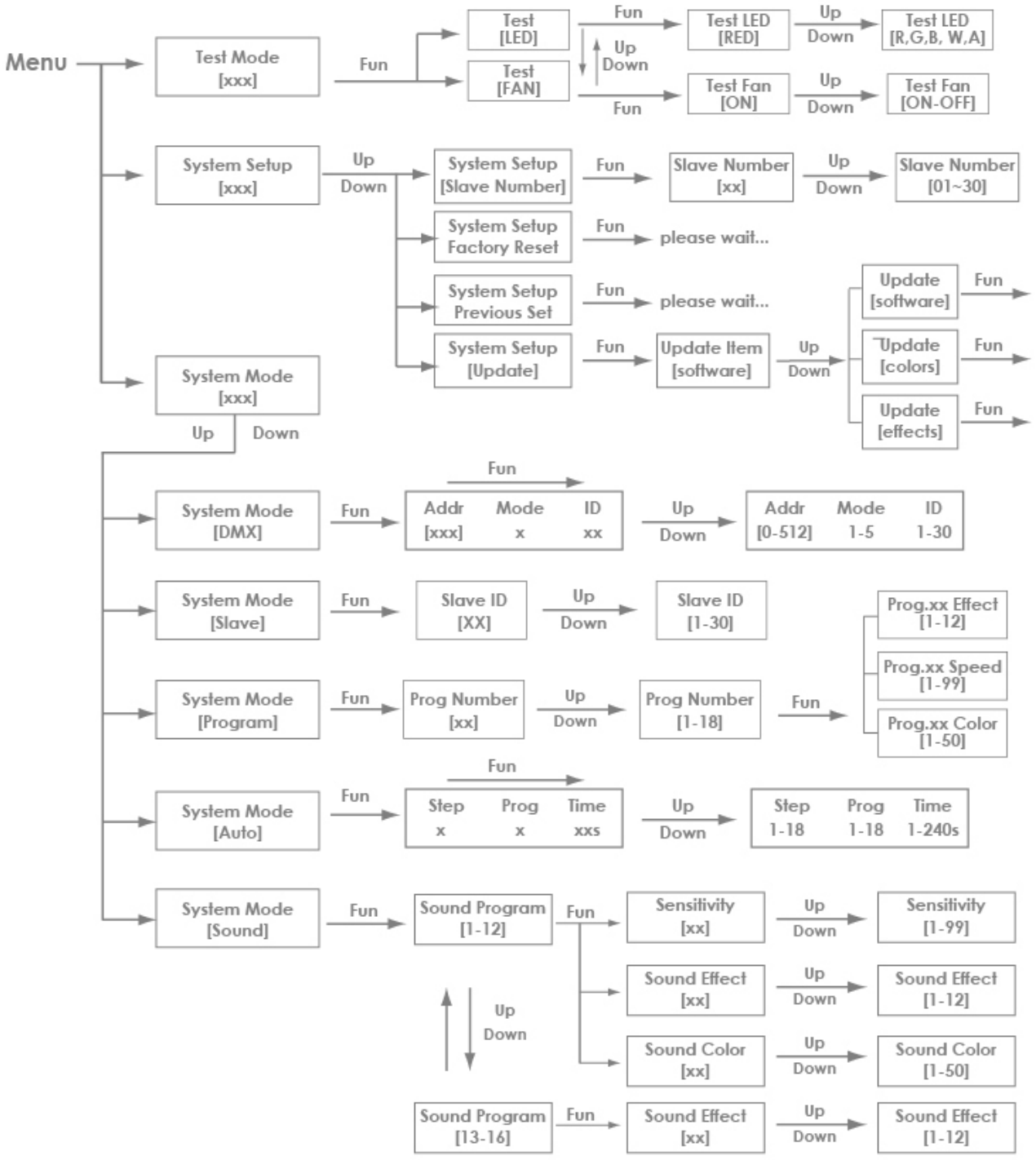
DMX-512 Connection With DMX Terminator

For installations where the DMX cable has to run a long distance, or is in an electrically noisy environment, it is recommended to use a DMX terminator. This helps in preventing corruption of the digital control signal by electrical noise. The DMX terminator is simply an XLR plug with a 120 Ω resistor connected between pins 2 and 3,which is then plugged into the output XLR socket of the last fixture in the chain. Please see illustrations below.



6. MENU NAVIGATION

When navigating the menu:
Use “UP” button to move up.
Use “DOWN” button to move down.
Use “FUN” button to move right.
Use “MENU” button to move left.



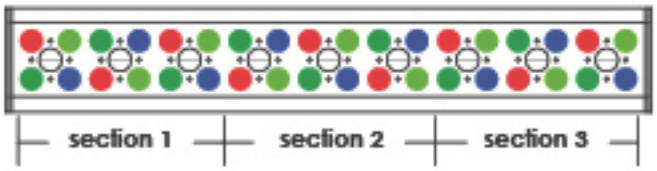
7. DMX CHANNELS

Mode 1: 4 DMX Channels

Ch 1: Master Dimmer	Ch 2: Effects	Ch 3: Colours		Ch 4: Speed Effect
000 – 255 Brightness Adjust 0 - 100%	000 – 023 Effect 1 024 – 046 Effect 2 047 – 069 Effect 3 070 – 092 Effect 4 093 – 115 Effect 5 116 – 139 Effect 6 140 – 162 Effect 7 163 – 185 Effect 8 186 – 208 Effect 9 209 – 231 Effect 10 232 – 254 Effect 11 255 Effect 12	000 – 005 Colour 1 006 – 010 Colour 2 011 – 015 Colour 3 016 – 020 Colour 4 021 – 026 Colour 5 027 – 031 Colour 6 032 – 036 Colour 7 037 – 041 Colour 8 042 – 046 Colour 9 047 – 052 Colour 10 053 – 057 Colour 11 058 – 062 Colour 12 063 – 067 Colour 13 068 – 072 Colour 14 073 – 078 Colour 15 079 – 083 Colour 16 084 – 088 Colour 17 089 – 093 Colour 18 094 – 098 Colour 19 099 – 104 Colour 20 105 – 109 Colour 21 110 – 114 Colour 22 115 – 119 Colour 23 120 – 124 Colour 24 125 – 130 Colour 25	131 – 135 Colour 26 136 – 140 Colour 27 141 – 145 Colour 28 146 – 150 Colour 29 151 – 156 Colour 30 157 – 161 Colour 31 162 – 166 Colour 32 167 – 171 Colour 33 172 – 176 Colour 34 177 – 182 Colour 35 183 – 187 Colour 36 188 – 192 Colour 37 193 – 197 Colour 38 198 – 202 Colour 39 203 – 208 Colour 40 209 – 213 Colour 41 214 – 218 Colour 42 219 – 223 Colour 43 224 – 228 Colour 44 229 – 234 Colour 45 235 – 239 Colour 46 240 – 244 Colour 47 245 – 249 Colour 48 250 – 254 Colour 49 255 – 255 Colour 50	000 – 255 Speed Adjust Slow - Fast

Mode 2: 8 DMX Channels

Channel	Function	
1	Master Dimmer	000 – 255 Brightness Adjust 0 – 100%
2	Strobe	000 – 004 No Function 005 – 255 Strobe Slow to Fast
3	Effects	000 – 015 No Function 016 – 055 50 Colour Step Changing 056 – 095 50 Colour Cross Fade 096 – 135 50 Colour Flowing From Left to Right 136 – 175 50 Colour Flowing From Right to Left 176 – 215 50 Colour Chasing From Center to Ends 216 – 255 50 Colour Chasing From Ends to Center
4	Red	000 – 255 Brightness Adjust 0 – 100%
5	Green	000 – 255 Brightness Adjust 0 – 100%
6	Blue	000 – 255 Brightness Adjust 0 – 100%
7	White	000 – 255 Brightness Adjust 0 – 100%
8	Amber	000 – 255 Brightness Adjust 0 – 100%



Mode 3: 21 DMX Channels

Channel	Function	
1	Master Dimmer	000 – 255 Brightness Adjust 0 – 100%
2	Effects	000 – 015 No Function 016 – 055 50 Colour Step Changing 056 – 095 50 Colour Cross Fade 096 – 135 50 Colour Flowing From Left to Right 136 – 175 50 Colour Flowing From Right to Left 176 – 215 50 Colour Chasing From Center to Ends 216 – 255 50 Colour Chasing From Ends to Center
	Section 1	
3	Strobe	000 – 004 No Function 005 – 255 Strobe Slow to Fast
4	Red	000 – 255 Brightness Adjust 0 – 100%
5	Green	000 – 255 Brightness Adjust 0 – 100%
6	Blue	000 – 255 Brightness Adjust 0 – 100%
7	White	000 – 255 Brightness Adjust 0 – 100%
8	Amber	000 – 255 Brightness Adjust 0 – 100%
	Section 2	
9	Strobe	000 – 004 No Function 005 – 255 Strobe Slow to Fast
10	Red	000 – 255 Brightness Adjust 0 – 100%
11	Green	000 – 255 Brightness Adjust 0 – 100%
12	Blue	000 – 255 Brightness Adjust 0 – 100%
13	White	000 – 255 Brightness Adjust 0 – 100%
14	Amber	000 – 255 Brightness Adjust 0 – 100%
	Section 3	
15	Strobe	000 – 004 No Function 005 – 255 Strobe Slow to Fast
16	Red	000 – 255 Brightness Adjust 0 – 100%
17	Green	000 – 255 Brightness Adjust 0 – 100%
18	Blue	000 – 255 Brightness Adjust 0 – 100%
19	White	000 – 255 Brightness Adjust 0 – 100%
20	Amber	000 – 255 Brightness Adjust 0 – 100%

Mode 4: 48 DMX Channels

Channel	Function	
1	Master Dimmer	000 – 255 Brightness Adjust 0 – 100%
2	Master Strobe	000 – 004 No Function 005 – 255 Strobe Slow to Fast
3	Effects	000 – 015 No Function 016 – 055 50 Colour Step Changing 056 – 095 50 Colour Cross Fade 096 – 135 50 Colour Flowing From Left to Right 136 – 175 50 Colour Flowing From Right to Left 176 – 215 50 Colour Chasing From Center to Ends 216 – 255 50 Colour Chasing From Ends to Center
4	LED 1 Red	000 – 255 Brightness Adjust 0 – 100%
5	LED 2 Green	000 – 255 Brightness Adjust 0 – 100%
6	LED 3 Blue	000 – 255 Brightness Adjust 0 – 100%
7	LED 4 White	000 – 255 Brightness Adjust 0 – 100%
8	LED 5 Amber	000 – 255 Brightness Adjust 0 – 100%
9	LED 6 Red	000 – 255 Brightness Adjust 0 – 100%
10	LED 7 Green	000 – 255 Brightness Adjust 0 – 100%
11	LED 8 Blue	000 – 255 Brightness Adjust 0 – 100%
12	LED 9 White	000 – 255 Brightness Adjust 0 – 100%
13	LED 10 Amber	000 – 255 Brightness Adjust 0 – 100%
. . .	. . .	
46	LED 43 Blue	000 – 255 Brightness Adjust 0 – 100%
47	LED 44 White	000 – 255 Brightness Adjust 0 – 100%
48	LED 45 Amber	000 – 255 Brightness Adjust 0 – 100%

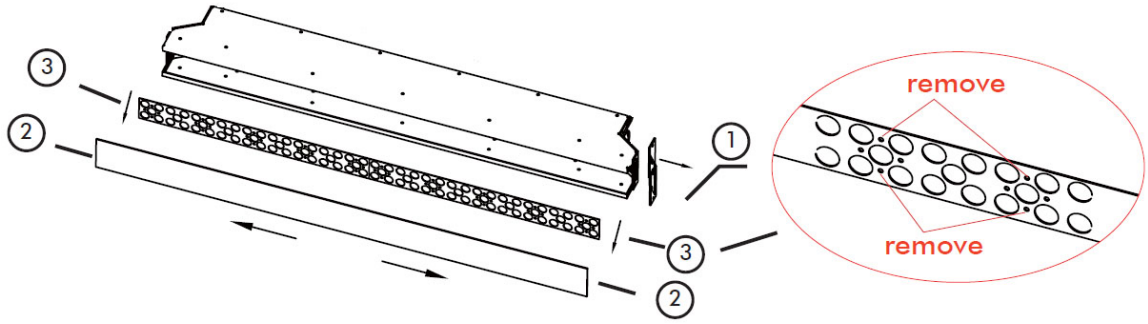
Mode 5: 49 DMX Channels

Channel	Function	
1	**(ID# Select)** 000 – 008 ID #1 009 – 017 ID #2 018 – 026 ID #3 027 – 035 ID #4 036 – 043 ID #5 044 – 052 ID #6 053 – 061 ID #7 062 – 070 ID #8 071 – 079 ID #9 080 – 087 ID #10 088 – 096 ID #11 097 – 105 ID #12 106 – 114 ID #13 115 – 123 ID #14 124 – 131 ID #15	 132 – 140 ID #16 141 – 149 ID #17 150 – 158 ID #18 159 – 167 ID #19 168 – 175 ID #20 176 – 184 ID #21 185 – 193 ID #22 194 – 202 ID #23 203 – 211 ID #24 212 – 219 ID #25 220 – 228 ID #26 229 – 237 ID #27 238 – 246 ID #28 247 – 254 ID #29 255 – 255 ID #30
2	Master Dimmer	000 – 255 Brightness Adjust 0 – 100%
3	Master Strobe	000 – 004 No Function 005 – 255 Strobe Slow to Fast
4	Effects	000 – 015 No Function 016 – 055 50 Colour Step Changing 056 – 095 50 Colour Cross Fade 096 – 135 50 Colour Flowing From Left to Right 136 – 175 50 Colour Flowing From Right to Left 176 – 215 50 Colour Chasing From Center to Ends 216 – 255 50 Colour Chasing From Ends to Center
5	LED 1 Red	000 – 255 Brightness Adjust 0 – 100%
6	LED 2 Green	000 – 255 Brightness Adjust 0 – 100%
7	LED 3 Blue	000 – 255 Brightness Adjust 0 – 100%
8	LED 4 White	000 – 255 Brightness Adjust 0 – 100%
9	LED 5 Amber	000 – 255 Brightness Adjust 0 – 100%
10	LED 6 Red	000 – 255 Brightness Adjust 0 – 100%
11	LED 7 Green	000 – 255 Brightness Adjust 0 – 100%
12	LED 8 Blue	000 – 255 Brightness Adjust 0 – 100%
13	LED 9 White	000 – 255 Brightness Adjust 0 – 100%
14	LED 10 Amber	000 – 255 Brightness Adjust 0 – 100%
. . .	. . .	
47	LED 43 Blue	000 – 255 Brightness Adjust 0 – 100%
48	LED 44 White	000 – 255 Brightness Adjust 0 – 100%
49	LED 45 Amber	000 – 255 Brightness Adjust 0 – 100%

8. KEY FEATURES

- 45 x 1.2W Edison LEDs (9 red, 9 green, 9 blue, 9 amber, 9 white)
- 5 DMX Channel Modes ID Addressing: 4, 8, 21, 48 & 49 Channels
- Bright Blue Digital LCD Display
- DMX 512, Master/Slave, Sound Active, Auto & Program Modes
- 50 Updatable Preset Colours
- 12 Editable and Updatable Programs
- 6 Built-in and Fixed Programs
- Onboard Programming Functionality Enables Programming Without External DMX Controller
- Sequential Running and Time Setup of Programs in Stand Alone
- Built-in Automated Programs via Master/Slave or DMX
- Program and Recall Custom Programs via master/slave or DMX
- USB connector for color/effect programs updating through USB device
- Thermal management system ensures long life of LEDs
- Automatic fan speed responding to internal temperature
- 3-pin & 5-pin XLR DMX In/Out
- Factory default reset
- Power failure memory
- 400MHz refresh frequency

LENS REPLACMENT - The MICROH RAZOR 45 comes with lens pre-installed at the factory. However, interchangeable lens system gives you options to change lens of different beam angle. Please follow the below instructions for proper replacement/installation.



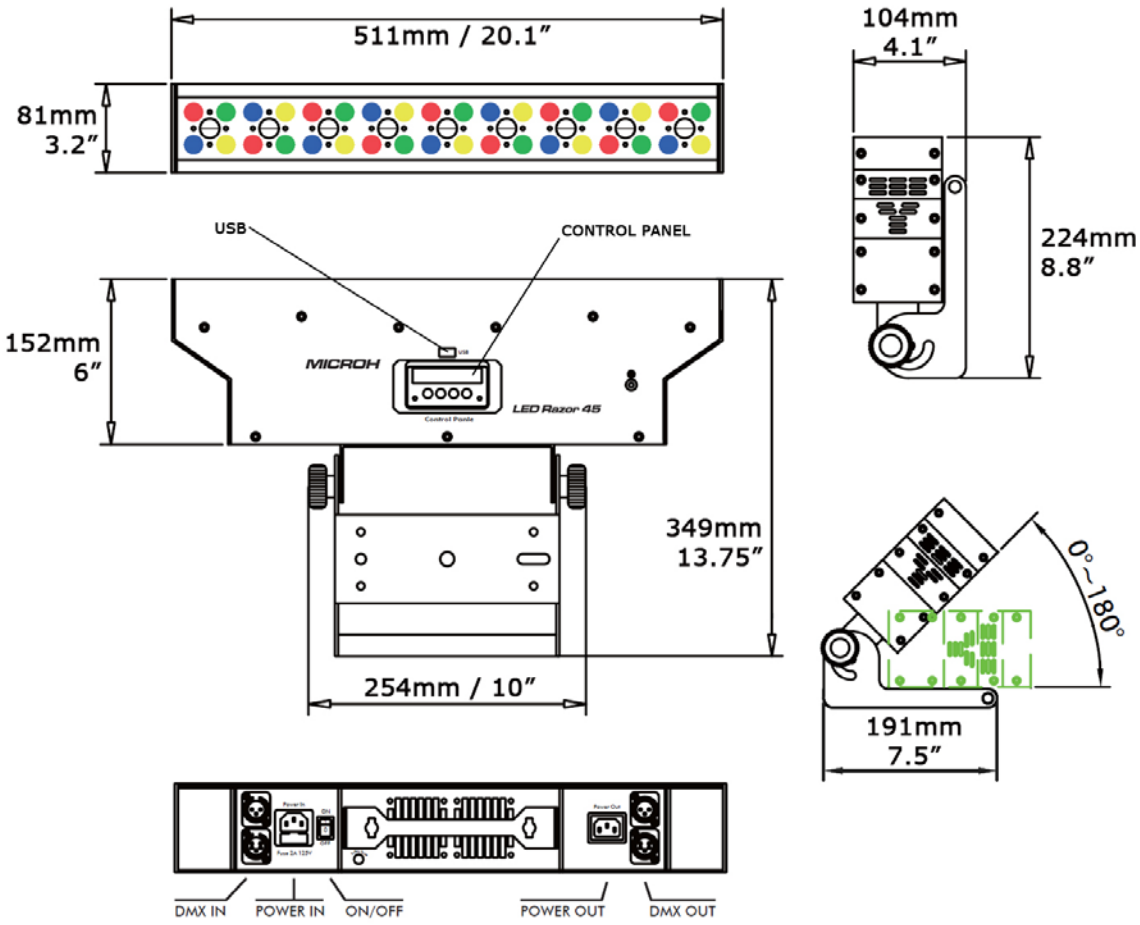
1. Remove all 8 screws from side metal cover.
2. Remove plastic front cover by sliding it out.
3. Remove all 10 screws that hold the lens kit in place and take out the complete lens kit.
4. Replace lens kit and follow reverse steps to close the fixture.

IMPORTANT!!! When replacing the lens assembly, please make sure that the power is disconnected from the fixture beforehand. LEDs on PCBs are sensitive to ESD (electrostatic discharge). Take precautions to avoid ESD damage during service.

9. TECHNICAL SPECIFICATIONS

MODEL: LED RAZOR45
LAMP: 45 x 1.2W Edison LEDs (9 Red, 9 Green, 9 Blue, 9 White Edison LEDs)
VOLTAGE: 120VAC 60Hz 114W 0.95A
FUSE: 2A /120VAC
DIMENSIONS: 21.1" x 6" x 8.8" / 511 x 152 x 224 mm
BOX DIMENSIONS: 24.09" x 11.34" x 8.58" / 612 x 288 x 218 mm
NET WEIGHT: 12.55 lbs / 7.3 kgs
GROSS WEIGHT: 16.1 lbs / 11kgs
WARRANTY: 2 Year Limited Warranty

10. UNIT OVERVIEW



11. MAINTENANCE AND CLEANING

The following points have to be considered during the inspection:

1) All screws for installing the device, or parts of the device must be tightly connected, and must not be corroded.

2) There must not be any deformations on the housing, colour lenses, fixations or installation spots (ceiling, suspension, trussing).

3) Mechanically moved parts must not show any traces of wearing and must not rotate with unbalances.

4) The electric power supply cables must not show any damage, material fatigue or sediments.
Further instructions depending on the installation spot and usage must be handled by a skilled installer or technician. Any safety issues must be resolved.

In order to keep the fixture in good condition and extend the life, we suggest regular cleaning to the fixture.

1) Clean the inside and outside lens each week to avoid the light output from darkening due to accumulation of dust, dirt, etc.

2) Clean the fan each week.

3) A detailed electrical check by approved technician every three months is advised. Ensure the circuit contacts are in good condition, and prevent from overheating.

We recommend a frequent cleaning of the device. Please use a moist, lint- free cloth. Never use alcohol or solvents.
There are no serviceable parts inside the device. Please refer to the instructions under “Installation instructions”.
Should you need any spare parts, please order genuine MICROH parts from your local dealer.

IF YOU SHOULD EXPERIENCE ANY PROBLEMS OR ISSUES PLEASE CONTACT MICROH PROFESSIONAL PRODUCTS BY EMAIL AT info@microhpro.com

In the event that your unit is defective in any way, please contact your local dealer to obtain an RA number for service repair.

DISCLAIMER – MICROH believes that the information contained within this user manual is accurate. However, Microh is not responsible for any error or addendums to this manual. If you have any comments or general suggestions on how this manual can be improved please contact info@microhpro.com. Thank you

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